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NEWS	2	DEC 01	ChemPort single article sales feature unavailable
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NEWS	5	FEB 06	Patent sequence location (PSL) data added to USGENE
NEWS	6	FEB 10	COMPENDEX reloaded and enhanced
NEWS	7	FEB 11	WTEXTILES reloaded and enhanced
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NEWS	10	FEB 23	Several formats for image display and print options discontinued in USPATFULL and USPAT2
NEWS	11	FEB 23	MEDLINE now offers more precise author group fields and 2009 MeSH terms
NEWS	12	FEB 23	TOXCENTER updates mirror those of MEDLINE - more precise author group fields and 2009 MeSH terms
NEWS	13	FEB 23	Three million new patent records blast AEROSPACE into STN patent clusters
NEWS	14	FEB 25	USGENE enhanced with patent family and legal status display data from INPADOCDB
NEWS	15	MAR 06	INPADOCDB and INPAFAMDB enhanced with new display formats
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NEWS	17	MAR 11	ESBIOBASE reloaded and enhanced
NEWS	18	MAR 20	CAS databases on STN enhanced with new super role for nanomaterial substances
NEWS	19	MAR 23	CA/CAPLUS enhanced with more than 250,000 patent equivalents from China
NEWS	20	MAR 30	IMSPATENTS reloaded and enhanced
NEWS	21	APR 03	CAS coverage of exemplified prophetic substances enhanced
NEWS	22	APR 07	STN is raising the limits on saved answers
NEWS	23	APR 24	CA/CAPLUS now has more comprehensive patent assignee information
NEWS	24	APR 26	USPATFULL and USPAT2 enhanced with patent assignment/reassignment information
NEWS	25	APR 28	CAS patent authority coverage expanded
NEWS	26	APR 28	ENCOMPLIT/ENCOMPLIT2 search fields enhanced
NEWS	27	APR 28	Limits doubled for structure searching in CAS REGISTRY

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FILE LAST UPDATED: 29 Apr 2009 (20090429/ED)

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=> s hopbract

L1 0 HOPBRACT

=> s hops

5381 HOPS

3 HOPSES

L2 5382 HOPS

(HOPS OR HOPSES)

=> s 12 and polyphenols  
20961 POLYPHENOLS  
L3 134 L2 AND POLYPHENOLS

=> s 13 and extract  
54659 EXTRACT  
55277 EXTRACTS  
105133 EXTRACT  
(EXTRACT OR EXTRACTS)  
372091 EXT  
251184 EXTS  
554848 EXT  
(EXT OR EXTS)  
591656 EXTRACT  
(EXTRACT OR EXT)  
L4 50 L3 AND EXTRACT

=> s 14 and py,=2003  
'2003' NOT A VALID FIELD CODE  
0 PY,=2003  
L5 0 L4 AND PY,=2003

=> s 14 and py<=2003  
24035350 PY<=2003  
L6 29 L4 AND PY<=2003

=> d 16 1-29 ibib ab

L6 ANSWER 1 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2006:53217 CAPLUS  
DOCUMENT NUMBER: 144:135253  
TITLE: Pharmaceutical compositions of hops resins  
INVENTOR(S): Kuhrts, Eric H.  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S.  
Ser. No. 140,495.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 20060013870	A1	20060119	US 2005-152023	20050613
US 20030228369	A1	20031211	US 2002-140495	20020506 <--
AU 2006259561	A1	20061228	AU 2006-259561	20060612
CA 2611898	A1	20061228	CA 2006-2611898	20060612
WO 2006138253	A1	20061228	WO 2006-US22886	20060612
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,			

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

US 2002-140495      A2 20020506  
US 2005-152023      A 20050613  
WO 2006-US22886      W 20060612

AB The present invention concerns a pharmaceutical composition comprising a dry free flowing powder. The powder can include various combinations of alpha acid, iso-alpha acids, and beta acids. The composition can further include a silica salt absorbent and/or an antioxidant. These comps. are preferably prepared by mixing hops ext. with an absorbent in a high intensity mixer without added solvent. Thus, a hops resin containing 60 wt % alpha acids was converted into a powder by using hops resin 68, calcium silicate 25, maltodextrin 5.5, and ascorbic acid 1.5%.

L6 ANSWER 2 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:687088 CAPLUS

DOCUMENT NUMBER: 143:438974

TITLE: Replacement of kettle hops with (reduced) isomerised hop extracts: implications for beer bitterness and flavour stability

AUTHOR(S): De Cooman, Luc; Aerts, Guido; De Rouck, Gert; Syryn, Evelien; Van Opstaele, Filip; Goiris, Koen; De Ridder, Marjan; Joos, Pieter; De Keukeleire, Denis

CORPORATE SOURCE: Laboratory of Enzyme and Brewing Technology, KaHo St.-Lieven, Ghent, B-9000, Belg.

SOURCE: Proceedings of the Congress - European Brewery Convention (2003), 29th, 24/1-24/13  
CODEN: EBCPA6; ISSN: 0367-018X

PUBLISHER: Fachverlag Hans Carl GmbH

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB Pre-isomerized hop exts. do not contain polyphenols.

Thus, their application could adversely affect flavor stability. This study on similar pilot beers demonstrates that exclusive bittering with iso- $\alpha$ -acids during wort boiling is not to the detriment of flavor stability. In comparison with conventional pellet hopping, advanced bittering is at least 'neutral' to flavor stability and markedly pos. in respect of bitterness quality. Flavor deterioration is further delayed when tetrahydroiso- $\alpha$ -acids are included post-fermentation. These observations raise the question on the relevance of the reducing power of kettle hops. Advanced hopping presents an alternative in view of refined bitterness and enhanced flavor stability.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:941421 CAPLUS

DOCUMENT NUMBER: 138:72284

TITLE: Xanthohumol in beer - possibilities and limitations of enrichment

AUTHOR(S): Forster, A.; Gahr, A.; Ketterer, M.; Beck, B.; Massinger, S.

CORPORATE SOURCE: Nateco GmbH & Co. KG, St. Johann/Hallertau, Germany

SOURCE: Monatsschrift fuer Brauwissenschaft (2002), 55(9/10), 184-186, 188-194  
CODEN: MOBRDJ; ISSN: 0723-1520

PUBLISHER: Fachverlag Hans Carl

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Xanthohumol, a polyphenol of hops, is said to have pos. physiol.

properties. Adequate research particularly on living cells has not been completed for a long time yet, but it still might be of interest, if and how xanthohumol may be enriched in beer. Besides conventional pellets or spent hops after CO<sub>2</sub>-extraction there are already especially developed xanthohumol exts. available, which may be specifically used. However, there are limits to elevation of xanthohumol levels and its isomer isoxanthohumol in com. filtered beers. Thus, xanthohumol and resp. isoxanthohumol levels in, for example bottom fermented com. beers, differ on a low scale from less than 0.1 ppm or rather less than 1 ppm. At the end of the production process of beer there can only 10-20% rel. be found of the amount of xanthohumol that has been spiked to wort. If xanthohumol is supposed to be enriched effectively a dosage with special xanthohumol exts. after fermentation or yeast filtration is recommended, whereas a constant turbidity has to be anticipated. Thus, beers rich in xanthohumol/isoxanthohumol are currently only imaginable as specialties. Beyond that, xanthohumol exts. can be added to any kind of turbid and lightly bitter beverages, which on their part can be the basis of beer mix beverages.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:326574 CAPLUS  
DOCUMENT NUMBER: 136:306887  
TITLE: Process for producing tannins from plants  
INVENTOR(S): Kim, Yong Wook; Lim, Se Jin; Kim, Myoung Ae  
PATENT ASSIGNEE(S): S. Korea  
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given  
CODEN: KRXXA7  
DOCUMENT TYPE: Patent  
LANGUAGE: Korean  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2000055727	A	20000915	KR 1999-4505	19990209 <--
PRIORITY APPLN. INFO.:			KR 1999-4505	19990209

AB A process of extracting tannins and polyphenol components from plants is provided. This process comprises : (1) extracting the skin of chestnut, persimmon, pine needle and hops with acetone, filtering and removing acetone to give crude exts., (2) removing water from the crude exts. and separating tannin components in a low polar organic solvent (petroleum ether, ether, Et acetate and butanol); said tannin components are gallic acid derivs., ellagic acid and catechin.

L6 ANSWER 5 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:780207 CAPLUS  
DOCUMENT NUMBER: 137:19527  
TITLE: Accelerated solvent extraction in the investigation of polyphenols in the brewing process  
AUTHOR(S): Papagiannopoulos, M.; Mellenthin, A.  
CORPORATE SOURCE: Institut fur Lebensmittelwissenschaft und Lebensmittelchemie, Rheinische Friedrich-Wilhelms-Universitat Bonn, Bonn, 53115, Germany  
SOURCE: Special Publication - Royal Society of Chemistry ( 2001), 269(Biologically-Active Phytochemicals in Food), 199-201  
CODEN: SROCD0; ISSN: 0260-6291  
PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The use of accelerated solvent extraction for the anal. of polyphenols in hops, malt and samples of the brewing process was evaluated. An optimized sample cleanup for subsequent HPLC-MS/MS anal. was also investigated. Extns. were carried out on an Automated Sample Extractor equipped with a Solvent Delivery Module for the use of solvent mixts. ASE offers a high potential for the anal. of phenolic compds. from solid sample materials. Extraction efficiency is higher compared to manual extraction, with a decreased amount of matrix interferences. ASE delivers exts . with a higher concentration of desired analytes in a reduced volume of solvent used. Moreover, extraction is much faster and allows for a higher number of analyses to be carried out in a given time. There is a reduced need for subsequent time consuming steps, like concentration by solvent evaporation, thus minimizing the possibility of alteration and degradation of sample compds.

L6 ANSWER 6 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:369105 CAPLUS

DOCUMENT NUMBER: 135:210293

TITLE: Reducing power of various hop varieties

AUTHOR(S): Lermusieau, G.; Liegeois, C.; Collin, S.

CORPORATE SOURCE: Unite de Brasserie et des Industries Alimentaires, Universite Catholique de Louvain, Louvain-la-Neuve, B-1348, Belg.

SOURCE: Cerevisia (2001), 26(1), 33-41

CODEN: CEREFI; ISSN: 1373-7163

PUBLISHER: Cerevisia

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Since lipid autoxidn. during wort boiling is determinant for the appearance of staling flavor in aged beers, the reducing power of hops added in the boiling kettle was investigated. An assay based on the inhibition of linoleic acid oxidation in the presence of an initiator (2,2'-azobis(2-amidino-propane) dihydrochloride; AAPH) enabled us to distinguish hop varieties and conditionings. Large differences in hop flavanoid contents explained the higher antioxidant activity of low- $\alpha$ -acid samples vs. bitter varieties and CO<sub>2</sub> hop exts. When the  $\alpha$ -acids reducing power was subtracted, very good correlation was observed between the resulting inhibition time and the amount of total flavanoids in pellets. An anal. of the hop polyphenols content explains this result since flavanoids represent more than 80% of phenolic compds. As expected, adding hop pellets to the kettle effectively increased the overall reducing activity of wort. Supercrit. CO<sub>2</sub> hop exts. had no significant effect due to their extremely low level of polyphenols. The concentration of the very well-known marker of beer ageing, trans-2-nonenal, was lower in wort boiled with hop exhibiting a better reducing power.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:109514 CAPLUS

DOCUMENT NUMBER: 134:352554

TITLE: Reducing power of hop cultivars and beer ageing

AUTHOR(S): Lermusieau, G.; Liegeois, C.; Collin, S.

CORPORATE SOURCE: Unite de Brasserie et des Industries Alimentaires, Universite Catholique de Louvain, Louvain-la-Neuve, B-1348, Belg.

SOURCE: Food Chemistry (2001), 72(4), 413-418  
CODEN: FOCHDJ; ISSN: 0308-8146  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Since lipid autoxidn. during wort boiling is a factor in the development of staling in aged beers, the authors investigated the reducing power of hops added in the boiling kettle. An assay based on the inhibition of linoleic acid oxidation in the presence of an initiator [2,2'-azobis(2-amidino-propane) dihydrochloride = AAPH] enabled the authors to distinguish hop varieties and conditionings. Large differences in hop flavanoid contents explained the higher antioxidant activity of low- $\alpha$ -acid samples vs. bitter varieties and CO<sub>2</sub> hop exts. As expected, adding hop pellets to the kettle effectively increased the overall reducing activity of wort. Supercrit. CO<sub>2</sub> hop exts. had no significant effect due to their extremely low level of polyphenols. The concentration of the very well-known marker of beer ageing, trans-2-nonenal, was lower in boiled wort exhibiting a better reducing power. The AAPH reducing power test applied to hops or worts was thus efficient in predicting nonenal synthesis during boiling. Hop varieties and conditionings emerged from this work as key parameters for improving the reducing power of wort and the flavor stability of the final product.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:575706 CAPLUS  
DOCUMENT NUMBER: 133:192167  
TITLE: Hops  
AUTHOR(S): Yoshida, Manabu  
CORPORATE SOURCE: Res. Inst. New Prod. Dev., Suntory Ltd., Japan  
SOURCE: Nippon Jozo Kyokaishi (2000), 95(8), 550-559  
CODEN: NJKYES; ISSN: 0914-7314  
PUBLISHER: Nippon Jozo Kyokai  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese

AB A review with 18 refs., on the major cultivation area of *Humulus lupulus*, biosynthesis of  $\alpha$ - and  $\beta$ -acids and their properties, essential oils and phenolic components of hops, pharmacol. effects of hop polyphenols, roles of hops in beer brewing, application of hop products (hop pellet, hop exts., iso- $\alpha$ -acid, modified iso- $\alpha$ -acid, etc.), and anal. of bitter components of hop products.

L6 ANSWER 9 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:492946 CAPLUS  
DOCUMENT NUMBER: 133:149724  
TITLE: Possibilities of using glucose-maltose syrups as substitutes for wort extract  
AUTHOR(S): Smogrovicova, Daniela; Domeny, Zoltan; Patkova, Jaroslava; Bafrcncova, Petra  
CORPORATE SOURCE: Katedra Biochem. Technologie, Chemickotechnol. Fakulta, Slovenska Tech. Univ., Bratislava, Slovakia  
SOURCE: Kvasny Prumysl (2000), 46(5), 133-136  
CODEN: KVPRAB; ISSN: 0023-5830  
PUBLISHER: Vyzkumny Ustav Pivovarsky a Sladarsky  
DOCUMENT TYPE: Journal  
LANGUAGE: Slovak

AB The use of Glucoplus 830 (containing mainly glucose and maltose) and Fermentose 352 (containing mainly maltose) made by the Amylum Co. (Slovakia)

as 10-50% substitutes for wort ext. in 12° beer brewing was studied under laboratory conditions in 2-L batches. Sucrose substitution was used for comparison. The sugar substitutes were added before boiling with hops and fermentation with *Saccharomyces cerevisiae* yeasts. The one-phase fermentation lasted 12 days at 10°C. The produced beers were evaluated for bitterness and color and chemical analyzed for pH, total polyphenols, total and protein N, apparent and true ext., ethanol, volatile compds., and diacetyl. The sugar substitutes affected the beer taste, flavor and foam stability especially at higher doses used. The practical impact of these changes would require a testing on a full production scale.

L6 ANSWER 10 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1997:184419 CAPLUS  
DOCUMENT NUMBER: 126:176658  
ORIGINAL REFERENCE NO.: 126:34009a,34012a  
TITLE: polyphenols from hops for manufacturing cosmetics or other products  
INVENTOR(S): Tagashira, Motoyuki; Uemitsu, Nobuo  
PATENT ASSIGNEE(S): Asahi Breweries Ltd, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09002917	A	19970107	JP 1995-173931	19950619 <--
JP 3477628	B2	20031210		

PRIORITY APPLN. INFO.: JP 1995-173931 19950619  
AB Polyphenols from exts. of hops for manufacturing cosmetics or other products are claimed. Thus, skin-care hand lotions were prepared containing carbowax 1500 15, ethanol 8, propylene glycol 90, water 52.5, the polyphenols 0.2 weight parts, perfumes, and preservatives.

L6 ANSWER 11 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1989:405857 CAPLUS  
DOCUMENT NUMBER: 111:5857  
ORIGINAL REFERENCE NO.: 111:1151a,1154a  
TITLE: Protein precipitation during wort boiling: quality aspects of diminished wort boiling times of brews prepared from proanthocyanidin-free or regular raw materials  
AUTHOR(S): Delcour, Jan A.; Vanhamel, Sonja; Moerman, Etienne; Vancraenenbroeck, Roger  
CORPORATE SOURCE: Lab. Toegespaste Org. Scheikd., Kathol. Univ. Leuven, Heverlee, B-3030, Belg.  
SOURCE: Journal of the Institute of Brewing (1988), 94(6), 371-4  
CODEN: JINBAL; ISSN: 0368-2587  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB When using proanthocyanidin-free materials for the production of beer, a red. of the wort boiling time can be considered. In worst prepared with regular malt and tannin-free hop ext. there is a continuous precipitation of the malt flavanoids while in brews prepared from a proanthocyanidin-free malt and regular hops there is a simultaneous extraction and removal of



the hop flavanoids leading to constant levels of these hop flavanoids. The results also show that the level of Kjeldahl nitrogen in wort boiled with hops will be the same as that in worts boiled with n-hexane tannin-free hop exts. These results and the fact that more protein ppts. in brews containing no malt or hop proanthocyanidins suggest that, unlike what is the case during the development of beer haze, polyphenols are not necessary for an effective protein precipitation during wort boiling.

L6 ANSWER 12 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1988:185189 CAPLUS  
DOCUMENT NUMBER: 108:185189  
ORIGINAL REFERENCE NO.: 108:30405a,30408a  
TITLE: Interactions of polyphenols with proteins during hop boiling  
AUTHOR(S): Skach, Josef; Mikyska, Alexandr  
CORPORATE SOURCE: Vyzk. Ustav Pivovar. Sladarsky, Prague, Czech.  
SOURCE: Kvasny Prumysl (1987), 33(8-9), 251-4  
CODEN: KVPRAB; ISSN: 0023-5830  
DOCUMENT TYPE: Journal  
LANGUAGE: Czech

AB The effect of polyphenol compds. of malt and hops on protein precipitation during hop boiling was tested on a laboratory scale. Polyphenol exts. of hops consist of complex polyphenols and proteins that are heat-resistant. Wort consists of a large quantity of single polyphenols which are resistant to polymerization and reactions with proteins during boiling. Due to the simultaneous effects of malt and hop polyphenols that complex with proteins, a significant quantity of proteins is precipitated in the form of tannin-protein complexes during boiling.

L6 ANSWER 13 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1988:73688 CAPLUS  
DOCUMENT NUMBER: 108:73688  
ORIGINAL REFERENCE NO.: 108:12191a,12194a  
TITLE: Effect of hop polyphenols on the physicochemical characteristics and colloidal stability of beer  
AUTHOR(S): Aksenova, Z. N.; Linetskaya, G. N.; Budko, L. V.;  
Fedorova, S. S.; Kozhukhar, M. M.; Shmuilovich, D. S.  
CORPORATE SOURCE: NPO Napitkov Miner. Vod, Kharkov, USSR  
SOURCE: Fermentnaya i Spirtovaya Promyshlennost (1987), (6), 35-7  
CODEN: FSPMAM; ISSN: 0367-3197  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

AB A correlation was found between the concns. of polyphenols and anthocyanogens and the quality of beer and worts. Chemical anal. showed that the major source of polyphenols in beer and worts is barley and malt rather than hops. Addition of hop ext. to worts had no effect on the levels of polyphenols, the physicochem. properties, or the colloidal stability of beer.

L6 ANSWER 14 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1986:87057 CAPLUS  
DOCUMENT NUMBER: 104:87057  
ORIGINAL REFERENCE NO.: 104:13813a,13816a  
TITLE: Semitechnical brewing assay for estimation of tannin constituents of hops and hop products  
AUTHOR(S): Puespoek, J.  
CORPORATE SOURCE: Austria

SOURCE: Mitteilungen der Versuchsstation fuer das  
Gaerungsgewerbe in Wien (1985), 39(9-10),  
120-5  
CODEN: MVGGAN; ISSN: 0369-271X

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The properties of beers that had been made with various hop products are described. The original ext. had the highest tannin content and precipitated proteins the most, resulting in the poorest foam. The color was only slightly affected by the original ext. Colloidal stability was improved when an ext. lacking polyphenols was used. Beer flavor was not much affected, but flavor stability was bad when a polyphenol-poor hop ext. was used.

L6 ANSWER 15 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1985:594901 CAPLUS

DOCUMENT NUMBER: 103:194901

ORIGINAL REFERENCE NO.: 103:31393a

TITLE: Variations of alpha and iso-alpha-compounds of  
hops in packaged beer during various storage  
conditions

AUTHOR(S): Jaeger, P.

CORPORATE SOURCE: Austria

SOURCE: Mitteilungen der Versuchsstation fuer das  
Gaerungsgewerbe in Wien (1985), 39(7-8),  
88-101

CODEN: MVGGAN; ISSN: 0369-271X

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Bottled beers that had been made with hop pellets or various hop  
exts. were stored in the dark or under lights for  $\leq 9$  wk at  
temps. between 10° and 40°. Diverse hop products all showed  
reproducible changes in their iso- $\alpha$ -acid composition. There is a close  
correlation between the effects of light and temperature on the  
iso- $\alpha$ -acids and on the polyphenols or anthocyanogens of  
beer. This explains the effects of storage on both the colloidal  
stability and flavor stability of beer.

L6 ANSWER 16 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1984:137293 CAPLUS

DOCUMENT NUMBER: 100:137293

ORIGINAL REFERENCE NO.: 100:20937a, 20940a

TITLE: Tanning properties of flavanols in barley and  
hops measured by reaction with cinchonine  
sulfate in relation to haze formation in beer

AUTHOR(S): McMurrough, I.; Hennigan, G. P.

CORPORATE SOURCE: Res. Lab., Arthur Guinness Son and Co. (Dublin) Ltd.,  
Dublin, 8, Ire.

SOURCE: Journal of the Institute of Brewing (1984),  
90(1), 24-32

CODEN: JINBAL; ISSN: 0368-2587

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The flavanoid polyphenol exts. from barley and hops  
were each separated into 6 fractions by adsorption chromatog. on Sephadex  
LH20. These fractions were further characterized by several anal.  
methods, including high-performance liquid chromatog. and a colorimetric  
measurement of polymerization index. The tanning powers of the fractions were  
graded according to their reactivities with cinchonine sulfate solution in a  
standardized turbidometric test. Whereas almost 75% of the flavanols from  
Ark Royal barley were non-tanning oligomers, almost 96% of the flavanols

from Bullion hops were polymeric tannins. Reactivity of most of the barley flavanols with cinchonine sulfate was increased greatly by oxidation with peroxidase and H<sub>2</sub>O<sub>2</sub>. Some effects of polymerization, caused by enzyme action or by exposure to air, on oxidizable polyphenols (nontannins) were measured using (+)-catechin [154-23-4], procyanidin B3 [23567-23-9], and prodelphinidin B3 [78362-05-7] in model systems. These and other measurements on exptl. and com. beers indicated that oxidation of simple flavanols from barley produced polymers with tanning properties. In contrast, the hop flavanols when extracted, apparently in their native forms, were capable of copptg. with polypeptides in beer. Treatment of beers with different stabilizing agents, such as Polyclar AT and silica hydrogel, retarded haze formation by restricting protein-polyphenol interactions.

L6 ANSWER 17 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1978:87596 CAPLUS  
DOCUMENT NUMBER: 88:87596  
ORIGINAL REFERENCE NO.: 88:13745a,13748a  
TITLE: Flavor compounds in barley, malt and wort  
AUTHOR(S): Kringstad, Hans K.  
CORPORATE SOURCE: Bryggeriind. Forskningslab., Swed.  
SOURCE: Brygmesteren (1977), 34(10), 215-27  
CODEN: BRYGAW; ISSN: 0007-2737  
DOCUMENT TYPE: Journal  
LANGUAGE: Norwegian

AB When wort without hops is extracted with ether at low pH, substances with a characteristic flavor are extracted. Exts. of barley and malt resulting from organic solvents do not give any particular aroma. If these exts. are later treated with H<sub>2</sub>O aroma occurs. The aroma appears to be formed during mashing. The flavors appear to be hydrolysis products of polyphenols, derivs. of cinnamic acid [621-82-9], particularly ferulic acid [1135-24-6]. Solvents which dissolve polyphenols have high concns. of flavor compds. Part of the flavor compds. remain in the grain and can only be dissolved by a new treatment with H<sub>2</sub>O. One explanation is that a fraction of the flavor compds. is strongly bound to the protein in the grain. Several extns. were used and the fractions characterized by thin-layer chromatog. and UV spectroscopy. Ferulic acid was predominant in the exts. An acetone extraction of malt upon steam distillation gave an intense characteristic odor.

L6 ANSWER 18 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1976:41935 CAPLUS  
DOCUMENT NUMBER: 84:41935  
ORIGINAL REFERENCE NO.: 84:6895a,6898a  
TITLE: Variations of polyphenols and their P. I. [polymerization index] during hop boiling in water and wort  
AUTHOR(S): Narziss, Ludwig; Bellmer, Horst G.  
CORPORATE SOURCE: Tech. Univ. Muenchen, Freising-Weihenstephan, Fed. Rep. Ger.  
SOURCE: Brauwissenschaft (1975), 28(11), 332-43  
CODEN: BRWSAO; ISSN: 0006-9337  
DOCUMENT TYPE: Journal  
LANGUAGE: German

AB The color, rapid reducing power, and P.I. of the hop polyphenols of the pitching wort increased depending on the polymerization level of the polyphenols in the added hops. A correlation exists between the P.I. of the hop polyphenols and the P.I. of the polyphenols of the pitching wort. The more polymerized the hop

polyphenols are, the lower is their loss during wort boiling and the more highly polymerized polyphenols remain in the pitching wort. When using hops or hop products with known high P.I., an increase in color in the pitching wort results from the increase in color of the polyphenols. When employing tannin-containing hop ext. the color of the reductones also increases. With increasing oxidation of the hop polyphenols, the reducing power of the polyphenols in the pitching wort is decreased. The ratio of polyphenols to color and to reducing power of the pitching wort was determined

L6 ANSWER 19 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1976:41919 CAPLUS  
DOCUMENT NUMBER: 84:41919  
ORIGINAL REFERENCE NO.: 84:6895a,6898a  
TITLE: Polyphenol content and polymerization index of hops and hop products  
AUTHOR(S): Narziss, Ludwig; Bellmer, Horst G.  
CORPORATE SOURCE: Tech. Univ. Muenchen, Freising-Weihestephan, Fed. Rep. Ger.  
SOURCE: Brauwissenschaft (1975), 28(10), 285-92  
CODEN: BRWSAO; ISSN: 0006-9337  
DOCUMENT TYPE: Journal  
LANGUAGE: German

AB The polyphenol content and polymerization index (P. I.) was studied during whole

hop processing to a powder or ext. and during storage. Both values in hops and hop powder were subject to seasonal effects. During processing from whole hops to powder, polyphenol content increased and P. I. decreased. Hot water extracted only 70% of the DMF-extractable polyphenols of hops and thus, standard ext. contained only 19-26% of the polyphenols present in whole hops. The P. I. of hop exts. was higher than that of whole hops. Low temperature storage resulted in variable decreases in polyphenol content and produced increases in P. I. in all studied products. High temperature storage resulted in accelerated transformations.

L6 ANSWER 20 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1974:550214 CAPLUS  
DOCUMENT NUMBER: 81:150214  
ORIGINAL REFERENCE NO.: 81:23443a,23446a  
TITLE: Color formation during the brewing process  
AUTHOR(S): Narziss, Ludwig  
CORPORATE SOURCE: Inst. Technol. Brau. I, Tech. Univ. Muenchen, Weihestephan, Fed. Rep. Ger.  
SOURCE: Brauwelt (1974), 114(19), 355-64, 366-8  
CODEN: BRUWAQ; ISSN: 0724-696X  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: German

AB A review with 34 refs. Malt, hop exts., and composition of wort are all responsible for color formation during brewing. The color formation arises through 4 processes: (1) formation of melanoidin, (2) enzymic oxidation of malt polyphenols, (3) oxidation of polyphenols of hops, and (4) oxidation of reductones.

L6 ANSWER 21 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1974:518491 CAPLUS  
DOCUMENT NUMBER: 81:118491  
ORIGINAL REFERENCE NO.: 81:18745a,18748a  
TITLE: Proportion and composition of nitrogenous substances

in nonbiological beer hazes in relation to the type of hopping  
AUTHOR(S): Mostek, Josef; Cizkova, Hana; Svoboda, Josef  
CORPORATE SOURCE: Fac. Food Biochem. Technol., Chem.-Technol. Coll., Prague, Czech.  
SOURCE: Brauwissenschaft (1974), 27(6), 149-55  
CODEN: BRWSAO; ISSN: 0006-9337  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
AB Beers brewed with CH2Cl2 hop exts. aged more rapidly and produced more haze than beers prepared with natural hops. The haze solids also contained up to 10% more total N and up to 26% more amino acids; polyphenols and anthocyanogens were decreased.

L6 ANSWER 22 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1973:476909 CAPLUS  
DOCUMENT NUMBER: 79:76909  
ORIGINAL REFERENCE NO.: 79:12481a,12484a  
TITLE: Polyphenols in brewing. II. Fractionation of polyphenols by ion-exchange chromatography  
AUTHOR(S): Sogawa, Hiroshi  
CORPORATE SOURCE: Japan  
SOURCE: Report of the Research Laboratories of Kirin Brewery Company (1972), No. 15, 17-24  
CODEN: RLKBAD; ISSN: 0075-6229  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Polyphenols in concentrated exts. of beer were quant. fractionated into several groups by column chromatog. using Dowex 1 + 4 anion-exchange resin. The column was eluted with 10, 20, 25, and 30% HCO<sub>2</sub>H in 75% MeOH. The polyphenol fractions were examined by uv absorption, paper chromatog. and differential spectrophotometry; 14 fractions were obtained from one brand of domestic beer. The extent of interaction between protein and polyphenol was strong ( $\Delta OD$  greater than 0.8), medium ( $\Delta OD = 0.3-0.8$ ) or slight ( $\Delta OD =$  less than 0.3) and 2 fractions showed strong and 6 showed moderate interaction. Some fractions of polyphenols treated with polyamide (20 g/l. of beer) were lost and the size of the fractions also decreased. These fractions are probably anthocyanogens. With hops, the major polyphenols were found in some fractions, with lesser amts. in others. Polyphenols in malt differed considerably from those in hops, and the former contributed more to beer polyphenols than did the latter. As with domestic brands, many different chromatog. patterns were obtained. The contents of some fractions of the polyphenols changed during storage of the beer. Approx. 8% of the polyphenols had a mol. weight of 500, 90% 500-10,000, and only a trace had a mol. weight >10,000.

L6 ANSWER 23 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1973:430459 CAPLUS  
DOCUMENT NUMBER: 79:30459  
ORIGINAL REFERENCE NO.: 79:4949a,4952a  
TITLE: Methods of determination of polyphenols in the brewery  
AUTHOR(S): Jerumanis, J.  
CORPORATE SOURCE: Sect. Brass., Univ. Louvain, Louvain, Belg.  
SOURCE: Bulletin de l'Association Royale des Anciens Etudiants en Brasserie de l'Universite de Louvain (1973), 69(1), 1-14  
CODEN: BAEBAD; ISSN: 0365-8775

DOCUMENT TYPE: Journal

LANGUAGE: French

AB After studying several methods of determining polyphenols in brewing products, a method based on use of ammoniacal Fe citrate in alkaline solution was

considered the most satisfactory. Details of 2 variants of the procedure have been published, and 1 of them was adopted by the European Brewery Convention. However, the other variant may be superior because it is more accurate with darker colored beers. Details of extraction and determination of polyphenols in hops, hop ext., barley, and malt are given. Anthocyanogens represent 90% of total polyphenols, catechol represents .apprx.4%, flavonols .apprx.0.8%, and phenolic acids .apprx.2% of the total polyphenols.

L6 ANSWER 24 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1970:131222 CAPLUS

DOCUMENT NUMBER: 72:131222

ORIGINAL REFERENCE NO.: 72:23497a,23500a

TITLE: Tannins in food technology with special reference to brewing

AUTHOR(S): Reynolds, Thomas

CORPORATE SOURCE: Brew. Ind. Res. Found., Surrey, UK

SOURCE: Food Sci. Technol., Proc. Int. Congr., 1st (1969), Meeting Date 1962, 395-9. Editor(s): Leitch, James Muil. Gordon and Breach Sci. Publ.: New York, N. Y. CODEN: 15ZPAM

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Polyphenolic materials of a tanninlike nature are present in many plant materials. When these materials are processed in the production of food, the tannins often become altered and affect the quality of the finished product. Prominent among the polyphenols involved are the anthocyanogens (leucoanthocyanins). These compound are involved, together with protein, in the formation of no nbiol. haze in beer, wine, and cider. The polyphenols undergo oxidation in the presence of air, probably catalyzed by heavy metal ions and the oxidized forms react with protein to form a ppt. This sequence occurs in many bottled beverages, such as beer, and is accelerated by unsuitable storage, the sale value of the beverage being thereby reduced. In beer, about 30-80%, depending upon the brewing process used, of the antocyanogens in the hopped wort, is derived from malt while the remainder originates from the hops. If beer is stored at a low temperature, a feature of the manufacture of lager, a haze is

formed which redissolves on warming. If, however, this haze is filtered off from the chilled beer, subsequent formation of storage haze is retarded. Tannins are prominent constituents of other beverages and a series of polyphenols has been recognized in exts. of cocoa and tea. An example of deterioration of foods due to chemical change of the polyphenols is seen if soft fruits are preserved in a highly acidic environment when it frequently happens that the leucoanthocyanins are converted into anthocyanidin pigments which detract from the appearance of the product. This is particularly marked in the case of pears and gooseberries.

L6 ANSWER 25 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1970:120035 CAPLUS

DOCUMENT NUMBER: 72:120035

ORIGINAL REFERENCE NO.: 72:21579a,21582a

TITLE: Polymerization of polyhydric phenols

AUTHOR(S): Jerumanis, J.

CORPORATE SOURCE: Sect. Brass., Univ. Louvain, Louvain, Belg.  
SOURCE: Bulletin de l'Association Royale des Anciens Etudiants  
en Brasserie de l'Universite de Louvain (1969  
, 65(4), 169-90  
CODEN: BAEBA2; ISSN: 0365-8775  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: French  
AB The polymerization index of anthocyanogens in hops, malt, barley  
exts. and beer was determined and the polymerization mechanism of these  
polyphenols was discussed. The amount of polyphenols in  
beer was determined as a function of temperature and air content in the  
bottle. A  
review with 46 refs. on polyphenols polymerization is included.

L6 ANSWER 26 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1970:53708 CAPLUS  
DOCUMENT NUMBER: 72:53708  
ORIGINAL REFERENCE NO.: 72:9815a,9818a  
TITLE: Determination of polyphenols in hops  
, hop extracts, barley, and malt  
AUTHOR(S): Jerumanis, J.  
CORPORATE SOURCE: Univ. Louvain, Louvain, Belg.  
SOURCE: Bulletin de l'Association Royale des Anciens Etudiants  
en Brasserie de l'Universite de Louvain (1969  
, 65(3), 113-31  
CODEN: BAEBA2; ISSN: 0365-8775  
DOCUMENT TYPE: Journal  
LANGUAGE: French  
AB Conventional hot water extraction of hops or extraction with EtOH, MeOH,  
or Me2CO gave a low content of polyphenols in the ext.  
as compared with extraction with 25% HCONMe2. Thus, certain samples of  
hops contained 8-9% polyphenols (dry basis), while hot  
water exts. of these contained 4-6%. The alcs. and Me2CO gave  
higher results than hot water but not as high as HCONMe2. The use of  
HCONMe2 has the advantages of more complete extraction and preventing  
oxidation of  
the polyphenols during anal. Com. hop exts. were  
generally low in polyphenols, some samples containing none at all.  
The total polyphenol content of barleys and malts varied between 0.31 and  
0.49% (dry basis). The polyphenol content of the malt is not necessarily  
related to that of the barley from which it was made. Variations in  
germination may account for this. The polyphenol content of several  
varieties of barley is given. Different samples of the same variety of  
barley may show varying polyphenol contents. The polyphenol content of  
barley and malt is only about 5% that of the hops. There appear  
to be some hop varieties that are generally high in polyphenols;  
other varieties are low. Storage of the hops from one year to  
another does not lower the polyphenol content.

L6 ANSWER 27 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1968:485422 CAPLUS  
DOCUMENT NUMBER: 69:85422  
ORIGINAL REFERENCE NO.: 69:15947a,15950a  
TITLE: Results of hop research and their application in  
practice  
AUTHOR(S): Schur, F.  
CORPORATE SOURCE: Versuchssta. Schweiz Brau., Zurich, Switz.  
SOURCE: Schweizer Brauerei-Rundschau (1968), 79(7),  
180-4  
CODEN: SWBRA2; ISSN: 0036-7311  
DOCUMENT TYPE: Journal

LANGUAGE: German

AB The chemical composition of  $\alpha$ -acids of hops, their stability during storage, and their influence on the bitter taste of beer were studied. Hops polyphenols, their influence on the stability of beer, essential oils of hops, their influence on the flavor of beer, and their enzymic modifications upon storage were also studied. The replacement of hops by hop exts. depends upon preisomerization, that is the isomerization of  $\beta$ -acids into bitter  $\alpha$ -acids. This could be achieved by uv irradiation. The chemical composition of hop exts. is influenced by the nature of the extraction solvent. MeOH extracted less essential oils (71% of total) than MeCl (94%). Gas chromatog. expts. showed a decrease in the most volatile and an increase in the less volatile components of the essential oils of preisomerized hop exts. Upon cold addition of hops, only 60% of the total isohumulone content of hops was found in beer. This was not due to the pH of beer but to the reaction of isohumulone with SH-containing substances of beer. 24 references.

L6 ANSWER 28 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1967:431539 CAPLUS  
DOCUMENT NUMBER: 67:31539  
ORIGINAL REFERENCE NO.: 67:5923a,5926a  
TITLE: Process of wort boiling  
AUTHOR(S): De Clerck, Jean  
CORPORATE SOURCE: Univ. Louvain, Belg.  
SOURCE: Brewers Digest (1967), 42(3), 96-9  
CODEN: BRDGAT; ISSN: 0006-971X  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Wort boiling stabilizes the wort by inactivating the enzymes and exts. valuable substances from the hops.  $\alpha$ -Acids and humulones are converted to isohumulones during wort boiling. Under the best conditions the yield of isohumulones is not greater than 65%. Hulupones (oxidation products of  $\beta$ -acids or lupulones), humililones (oxidation products of  $\alpha$ -acids), and a  $\delta$  component of hard resins yield a bitter taste less than that of isohumulones. They are completely soluble but are important only in old and oxidized hops. Two major factors for the coagulation of proteins are pH and intensity of boiling. There is a decrease in wort pH during wort boiling as a result of liberation of H ions, precipitation of  $\text{Ca}_3(\text{PO}_4)_2$ , and formation of melanoidins (which show acid reaction). Boiling leads to strong wort agitation thereby hastening protein coagulation. With properly adjusted pH, an excellent break formation is achieved when evaporation rate is about 6%/hr. Essential oils undergo transformation during kettle boiling. They tend to form resins in the wort, giving rise to an acrid taste. Vacuum treatment of hops improves beer flavor by eliminating a major portion of the essential oils. There is marked increase in color during wort boiling due principally to the formation of melanoidins and oxidation of polyphenols. Oxidation improves beer stability. Addition of reducing agents causes an increase of 6-10% of iso-humulones. Stability of beer foam is improved by wort boiling. In the majority of cases hops are added to wort in several portions during the process of boiling.

L6 ANSWER 29 OF 29 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1955:58205 CAPLUS  
DOCUMENT NUMBER: 49:58205  
ORIGINAL REFERENCE NO.: 49:11236d-e  
TITLE: Study of the tannins and polyphenols of hops  
AUTHOR(S): Vancraenenbroeck, R.; Lontie, R.  
SOURCE: Bulletin de l'Association des Anciens Etudiants en



Brasserie de l'Universite de Louvain (1955),  
51, 1-14

CODEN: BUAVAC; ISSN: 0366-3965

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Expts. were conducted on the separation and analysis of hops based on chromatography and countercurrent distribution. The bitter resins were removed by continuous extraction with C6H6 followed by extraction of the polyphenols with 75% acetone. The acetone ext. was analyzed by partition chromatography. The presence of flavonols and leucoanthocyanins was confirmed.

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FULL ESTIMATED COST	0.35	100.77
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-23.78

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FILE LAST UPDATED: 29 Apr 2009 (20090429/ED)

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=> s "humulus lupulus L" "Hop bract polyphenols" "hop bitter acids"
      2343 "HUMULUS"
      1432 "LUPULUS"
1756191 "L"
      8032 "HOP"
      5381 "HOPS"
      10603 "HOP"
          ("HOP" OR "HOPS")
      509 "BRACT"
      943 "BRACTS"
      1242 "BRACT"
          ("BRACT" OR "BRACTS")
20961 "POLYPHENOLS"
      8032 "HOP"
      5381 "HOPS"
      10603 "HOP"
          ("HOP" OR "HOPS")
      17470 "BITTER"
      498 "BITTERS"
      17636 "BITTER"
          ("BITTER" OR "BITTERS")
1689376 "ACIDS"
L7      0 "HUMULUS LUPULUS L" "HOP BRACT POLYPHENOLS" "HOP BITTER ACIDS"
          ("HUMULUS" (W) "LUPULUS" (W) "L" (W) "HOP" (W) "BRACT" (W) "POLYPHENOLS"
          (W) "HOP" (W) "BITTER" (W) "ACIDS")
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(FILE 'HOME' ENTERED AT 15:21:58 ON 30 APR 2009)

FILE 'CAPLUS' ENTERED AT 15:22:17 ON 30 APR 2009

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L1      0 S HOPBRACT
L2      5382 S HOPS
L3      134 S L2 AND POLYPHENOLS
L4      50 S L3 AND EXTRACT
L5      0 S L4 AND PY,=2003
L6      29 S L4 AND PY<=2003
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FILE 'STNGUIDE' ENTERED AT 15:24:27 ON 30 APR 2009

FILE 'CAPLUS' ENTERED AT 15:27:42 ON 30 APR 2009

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L7      0 S "HUMULUS LUPULUS L" "HOP BRACT POLYPHENOLS" "HOP BITTER ACIDS"
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=> s TAGASHIRA M?/AU

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L8      122 TAGASHIRA M?/AU
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=> s KANDA T?/AU

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L9      1828 KANDA T?/AU
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=> s l8 and l9

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L10     14 L8 AND L9
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=> d l10 1-14 ibib ab

L10 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:1041075 CAPLUS  
DOCUMENT NUMBER: 150:90051  
TITLE: Inflammatory responses of gingival epithelial cells stimulated with Porphyromonas gingivalis vesicles are inhibited by hop-associated polyphenols  
AUTHOR(S): Kou, Yurong; Inaba, Hiroaki; Kato, Takahiro; Tagashira, Motoyuki; Honma, Daiki; Kanda, Tomomasa; Ohtake, Yasuyuki; Amano, Atsuo  
CORPORATE SOURCE: Department of Oral Frontier Biology, Osaka University Graduate School of Dentistry, Suita-Osaka, Japan  
SOURCE: Journal of Periodontology (2008), 79(1), 174-180  
CODEN: JOPRAJ; ISSN: 0022-3492  
PUBLISHER: American Academy of Periodontology  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Periodontitis is induced by an imbalance between bacterial virulence and host defense ability. Porphyromonas gingivalis, a predominant periodontal pathogen, triggers a series of host inflammatory responses that aggravate the destruction of periodontium. Thus, anti-inflammatory reagents are considered desirable for effective periodontal therapy. In the present study, we examined the inhibitory effects of hop bract polyphenol (HBP) on cellular inflammatory responses induced by P. gingivalis membrane vesicles. Immortalized human gingival epithelial cells were stimulated with P. gingivalis membrane vesicles, and the effects of HBP on mRNA expression of cyclooxygenase (COX)-2, interleukin (IL)-6 and -8, and matrix metalloproteinase (MMP)-1 and -3 were examined using real-time reverse transcription-polymerase chain reaction. HBP inhibited the mRNA expression of COX-2, IL-6 and -8, and MMP-1 and -3 in a dose-dependent manner, whereas epigallocatechin gallate (a control polyphenol) inhibited COX-2 mRNA expression only. Following further fractionation of HBP to identify the effective components, 2-[(2-methylpropanoyl)-phloroglucinol]1-O- $\beta$ -D-glucopyranoside (MPPG) was identified as a significant anti-inflammatory element that completely inhibited the inflammatory mRNA induction. Kaempferol 3-O- $\beta$ -glucopyranoside (astragalin) also was found to have anti-inflammatory effects. HBP is suggested to be a potent inhibitor of cellular inflammatory responses induced by P. gingivalis vesicles. Further, MPPG and astragalin, identified here as effective components of HBP, also may be useful for the prevention and/or attenuation of periodontitis.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:912244 CAPLUS  
DOCUMENT NUMBER: 149:168033  
TITLE: 2-acylphloroglucinol-4,6-di-C- $\beta$ -D-glucopyranoside derivs. from Humulus lupulus as antioxidants  
INVENTOR(S): Honma, Hiroki; Tagashira, Motoyuki; Kanda, Tomomasa  
PATENT ASSIGNEE(S): Asahi Breweries, Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008174458	A	20080731	JP 2007-7030	20070116

PRIORITY APPLN. INFO.: JP 2007-7030 20070116

OTHER SOURCE(S): MARPAT 149:168033

AB 2-Acylphloroglucinol-4,6-di-C- $\beta$ -D-glucopyranoside derivs., e.g. 2-(3-methylbutyryl)phloroglucinol-4,6-di-C- $\beta$ -D-glucopyranoside, are claimed as antioxidants, health foods, and cosmetics. Formulation examples of capsules, granules, injections, lotions, and health foods were given.

L10 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:912243 CAPLUS

DOCUMENT NUMBER: 149:207994

TITLE: Antioxidants comprising phloroglucinol glycoside

INVENTOR(S): Honma, Hiroki; Tagashira, Motoyuki;  
Kanda, Tomomasa

PATENT ASSIGNEE(S): Asahi Breweries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2008174457	A	20080731	JP 2007-7029	20070116
PRIORITY APPLN. INFO.:			JP 2007-7029	20070116

AB This invention relates to antioxidants, therapeutic agents, cosmetics, and foods/beverages comprising 2-(2-methylpropanoyl)phloroglucinol-1,5-di-O- $\beta$ -D-glucopyranoside (I) extracted from hop.

L10 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:632770 CAPLUS

DOCUMENT NUMBER: 149:866

TITLE: Identification of hop polyphenolic components which inhibit prostaglandin E2 production by gingival epithelial cells stimulated with periodontal pathogen

AUTHOR(S): Inaba, Hiroaki; Tagashira, Motoyuki; Honma, Daiki; Kanda, Tomomasa; Kou, Yurong; Ohtake, Yasuyuki; Amano, Atsuo

CORPORATE SOURCE: Department of Oral Frontier Biology, Osaka University Graduate School of Dentistry, 1-8 Yamadaoka, Suita, Osaka, 565-0871, Japan

SOURCE: Biological & Pharmaceutical Bulletin (2008), 31(3), 527-530

CODEN: BPBLEO; ISSN: 0918-6158

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chronic marginal periodontitis is a destructive inflammatory disease caused by an imbalance between bacterial virulence and host defense ability, resulting in eventual tooth exfoliation. Porphyromonas gingivalis, a major periodontal pathogen, triggers a series of cellular inflammatory responses including the production of prostaglandin E2 (PGE2), which causes periodontal destruction; thus, anti-inflammatory reagents are considered beneficial for periodontal therapy. In the present study, we examined whether hop- and apple-derived polyphenols (HBP and ACT, resp.) inhibit PGE2 production by human gingival epithelial (HGE) cells stimulated with P. gingivalis components. HGE cells were stimulated with P. gingivalis membrane vesicles, and the effects of HBP, ACT and epigallocatechin gallate (EGCg) on PGE2 production by HGE cells were evaluated using an ELISA. HBP and EGCg significantly inhibited PGE2 production, whereas

ACT did not. By further fractionation steps of HBP to identify the effective components, 3 components of HBP, 2-[(2-methylpropanoyl)-phloroglucinol]1-O- $\beta$ -D-glucopyranoside (MPPG), quercetin 3-O- $\beta$ -D-glucopyranoside (isoquercitrin), and kaempferol 3-O- $\beta$ -glucopyranoside (astragalin), were found to be elements which significantly inhibited cellular PGE2 production. These results suggest that HBP is a potent inhibitor of cellular PGE2 production induced by P. gingivalis, and HBP may be useful for the prevention and attenuation of periodontitis.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:286262 CAPLUS

DOCUMENT NUMBER: 148:315151

TITLE: Method for production of hop preparation, hop preparation, antiinflammatory agent, food/beverage, and oral product

INVENTOR(S): Inaba, Hiroaki; Honma, Daiki; Tagashira, Motoyuki; Kanda, Tomomasa; Amano, Atsuo

PATENT ASSIGNEE(S): Asahi Breweries, Ltd., Japan

SOURCE: PCT Int. Appl., 27pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008026473	A1	20080306	WO 2007-JP66148	20070821
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

PRIORITY APPLN. INFO.: JP 2006-236774 A 20060831

AB Provided is a method for producing a preparation which can be used for the prevention/treatment of an inflammatory disease including gingivitis caused by Porphyromonas gingivalis. The method comprises the following steps (1) to (3): (1) adjusting the pH value of a liquid solution containing a polyphenol fraction produced from a hop bract to 6 to 7, and passing the liquid solution through a styrene-divinylbenzene resin to cause the adsorption of components including a useful substance onto the resin; (2) washing the resin obtained in the step (1) with a 30-60% aqueous ethanol solution to elute out and remove an undesired substance from the components adsorbed on the resin; and (3) eluting out components including the useful substance from the resin produced in the step (2) with a 70% or higher aqueous ethanol solution

or ethanol and producing a preparation by using the resulting elution fraction.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:771458 CAPLUS  
 DOCUMENT NUMBER: 147:405163  
 TITLE: Safety evaluation of polyphenols extracted from hop bracts  
 AUTHOR(S): Nagasako-Akazome, Yoko; Honma, Daiki; Tagashira, Motoyuki; Kanda, Tomomasa; Yasue, Masaaki; Ohtake, Yasuyuki  
 CORPORATE SOURCE: Fundamental Research Laboratory, Asahi Breweries, Ltd., Moriya-shi, Ibaraki, 302-0106, Japan  
 SOURCE: Food and Chemical Toxicology (2007), 45(8), 1383-1392  
 CODEN: FCTOD7; ISSN: 0278-6915  
 PUBLISHER: Elsevier Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Hop bract polyphenols contain polyphenols as promising functional ingredients. To assess the safety of topical hop bract polyphenols, Hopsphenon we examined acute, 14-day, 28-day and 90-day toxicity tests in rats, and mutagenicity tests using Ames test and micronucleus test in mice. The acute, 14-day, 28-day and 90-day toxicity tests revealed that Hopsphenon produced no symptoms of significant injury. The LD of hop bract polyphenols is greater than 2000 mg/kg. The Ames test in the absence of S9 mix for TA98 and in the presence of S9 mix for TA1537 revealed that Hopsphenon had slight mutagenicity at a high dose of 5000 µg/plate; however, in the micronucleus test, Hopsphenon was neg. These tests demonstrated that hop bract polyphenols are safe and do not cause any detrimental effects in vivo under the conditions investigated in this study.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:200713 CAPLUS  
 DOCUMENT NUMBER: 146:212295  
 TITLE: Oral compositions containing cariostatic agents and gums  
 INVENTOR(S): Akazome, Yoko; Tagashira, Motoyuki; Kanda, Tomomasa; Hirai, Nobuaki  
 PATENT ASSIGNEE(S): Asahi Breweries, Ltd., Japan  
 SOURCE: PCT Int. Appl., 26pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007020830	A1	20070222	WO 2006-JP315617	20060808
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
JP 2007051096	A	20070301	JP 2005-237648	20050818

PRIORITY APPLN. INFO.: JP 2005-237648 A 20050818  
AB It is intended to provide an oral composition, which is safe and effective even if it is continuously used and is characterized by showing a cariostatic action, an anti-periodontal disease action and an anti-halitosis action. The oral composition showing a cariostatic action, an anti-periodontal disease action and an anti-halitosis action is characterized by containing components of (a) proanthocyanidins as a cariostatic material and/or an anti-periodontal disease material and (b) a soluble viscosity-enhancing polysaccharide as a gumming agent as essential components.  
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2007:164217 CAPLUS  
DOCUMENT NUMBER: 146:417566  
TITLE: Retention behavior of oligomeric proanthocyanidins in hydrophilic interaction chromatography  
AUTHOR(S): Yanagida, Akio; Murao, Hirokazu; Ohnishi-Kameyama, Mayumi; Yamakawa, Yutaka; Shoji, Atsushi; Tagashira, Motoyuki; Kanda, Tomomasa; Shindo, Heisaburo; Shibusawa, Yoichi  
CORPORATE SOURCE: Division of Structural Biology and Analytical Science, School of Pharmacy, Tokyo University of Pharmacy and Life Science, 1432-1 Horinouchi, Hachioji, Tokyo, 192-0392, Japan  
SOURCE: Journal of Chromatography, A (2007), 1143(1-2), 153-161  
CODEN: JCRAEY; ISSN: 0021-9673  
PUBLISHER: Elsevier B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB A novel method was developed for the separation of proanthocyanidins (PAs; oligomeric flavan-3-ols) by hydrophilic interaction chromatog. (HILIC) using an amide-silica column eluting with an aqueous acetonitrile mobile phase. The best separation was achieved with a linear gradient elution of acetonitrile-water at ratios of 9:1 to 5:5 (volume/volume) for 60 min at a flow rate of 1.0 mL/min. Under these HPLC conditions, a mixture of natural oligomeric PAs (from apple) was separated according to d.p. (DP) up to decamers. The DP of each separated oligomer was confirmed by LC/electrospray ionization MS. In further HILIC separation studies of 15 different flavan-3-ol and oligomeric PA (up to pentamer) stds. with an isocratic elution of acetonitrile-water (84:16), a high correlation was observed between the logarithm of retention factors (log k) and the number of hydroxyl groups in their structures. The coefficient of this correlation ( $r^2 = 0.9501$ ) was larger than the coefficient ( $r^2 = 0.7949$ ) obtained from the correlation between log k and log  $P_o/w$  values. These data reveal that two effects, i.e. hydrogen bonding between the carbamoyl terminal on the column and the hydroxyl group of solute oligomer and hydrophilicity based on the high-order structure of oligomeric PAs, corporately contribute to the separation, but the hydrogen bonding effect is predominant in the authors' HILIC separation mode.  
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2006:78441 CAPLUS  
DOCUMENT NUMBER: 145:937  
TITLE: Apple- and hop-polyphenols protect periodontal ligament cells stimulated with enamel matrix derivative from Porphyromonas gingivalis  
AUTHOR(S): Inaba, Hiroaki; Tagashira, Motoyuki; Kanda, Tomomasa; Ohno, Takashi; Kawai, Shinji;

CORPORATE SOURCE: Amano, Atsuo  
Department of Oral Frontier Biology, Osaka University  
Graduate School of Dentistry, Osaka, Japan  
SOURCE: Journal of Periodontology (2005), 76(12), 2223-2229  
CODEN: JOPRAJ; ISSN: 0022-3492  
PUBLISHER: American Academy of Periodontology  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Enamel matrix derivative (EMD) is a tissue regenerative agent used clin. as an adjunct to periodontal surgery. It was previously demonstrated that Porphyromonas gingivalis, a periodontal pathogen, significantly diminished the efficacy of EMD with periodontal ligament (PDL) cells through the proteolytic actions of Arg- and Lys-gingipains (Rgp and Kgp). Thus, antiproteolytic supplements are considered clin. desirable for effective periodontal regenerative therapies. In the present study, we examined apple- (AP) and hop-polyphenols to determine their ability to protect EMD-stimulated PDL cells from P. gingivalis. AP, apple condensed tannin (ACT), hop bract polyphenol (HBP), high and low mol. weight fractions of HBP (HMW-HBP and LMW-HBP), and epigallocatechin gallate (EGCg) were used. PDL cells were grown on EMD-coated dishes and infected with P. gingivalis, and cellular migration and proliferation were evaluated with an in vitro assay of wound healing assay in the presence or absence of the polyphenols. Each polyphenol significantly enhanced the viability of PDL cells infected with P. gingivalis, whereas only EGCg demonstrated cytotoxicity. Further, all polyphenols significantly inhibited Rgp activity, with AP, ACT, and HBP more effective toward Kgp. P. gingivalis markedly diminished the migration and proliferation of EMD-stimulated PDL cells, whereas the addition of AP, ACT, HBP, and HMW-HBP significantly protected the cells from bacterial cytotoxicity. In contrast, EGCg and LMW-HBP did not show protective effects. These results suggest that AP, ACT, AP, HBP, and HMW-HBP protect EMD-stimulated PDL cells from P. gingivalis and may be therapeutically useful supplements for EMD therapy.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:1075625 CAPLUS  
DOCUMENT NUMBER: 143:352894  
TITLE: Periodontal ligament-protecting agents containing proanthocyanidin-like polyphenols  
INVENTOR(S): Inaba, Hiroaki; Tagashira, Motoyuki; Kanda, Tomomasa  
PATENT ASSIGNEE(S): Asahi Breweries, Ltd., Japan; Inaba, Hiroaki; Tagashira, Motoyuki; Kanda, Tomomasa; Amano, Atsuo  
SOURCE: PCT Int. Appl., 21 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 2005092327	A1	20051006	WO 2005-JP3166	20050225
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,				



AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
MR, NE, SN, TD, TG

CA 2520166	A1	20051006	CA 2005-2520166	20050225
AU 2005203558	A1	20051013	AU 2005-203558	20050225
CN 1764448	A	20060426	CN 2005-80000052	20050225
EP 1728509	A1	20061206	EP 2005-710716	20050225
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
KR 2006034624	A	20060424	KR 2005-714687	20050810
KR 821694	B1	20080411		
US 20060165609	A1	20060727	US 2005-545412	20050812
US 20070092456	A1	20070426	US 2006-640301	20061218
KR 2007097581	A	20071004	KR 2007-718773	20070816

PRIORITY APPLN. INFO.:

JP 2004-91098	A	20040326
WO 2005-JP3166	W	20050225
KR 2005-714687	A3	20050810
US 2005-545412	A1	20050812

AB It is intended to provide a periodontal ligament-protecting agent which prevents failures in the periodontal tissue (in particular, periodontal ligament) caused by *Porphyromonas gingivalis*, and an oral preparation, a food or a drink having effects of preventing and treating diseases relating to damage in periodontal ligament which contains this periodontal ligament-protecting agent. Namely, a periodontal ligament-protecting agent which is a proanthocyanidine having an effect of relieving toxicity of *Porphyromonas gingivalis* to periodontal ligament (preferably a proanthocyanidine originating in immature apple fruit or hop bract); and an oral preparation, a food or a drink containing this periodontal ligament-protecting agent as the active ingredient.

REFERENCE COUNT: 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:965910 CAPLUS

DOCUMENT NUMBER: 143:228201

TITLE: Analysis of polyphenols from hop bract region using CCC

AUTHOR(S): Kurumatani, Masami; Fujita, Rumi; Tagashira, Motoyuki; Shoji, Toshihiko; Kanda, Tomomasa; Ikeda, Mitsuo; Shoji, Atsushi; Yanagida, Akio; Shibusawa, Yoichi; Shindo, Heisaburo; Ito, Yoichiro

CORPORATE SOURCE: Fundamental Research Laboratory, Asahi Breweries, Ltd., Moriya, Ibaraki, Japan

SOURCE: Journal of Liquid Chromatography & Related Technologies (2005), 28(12-13), 1971-1983  
CODEN: JLCTFC; ISSN: 1082-6076

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyphenols derived from hop (*Humulus lupulus* L.) bract region (HBP) can be used as food materials, thereby preventing dental caries. Chemical details of the active substances need to be elucidated. The polyphenols from hop bract (HBP) region were purified by countercurrent chromatog. (CCC). The fractions were analyzed by high-performance size-exclusion chromatog. (HPSEC) and reversed phase high-performance liquid chromatog. (RP-HPLC). From HBP fractions by HPSEC, some low-mol.- weight polyphenols (glycosides of flavonoids, catechins, and proanthocyanidins) were identified by RP-HPLC. However, a very hydrophilic fraction was found to have the most potent cavity-preventive activity, but it showed no peak in

its RP-HPLC chromatogram (absence of small polyphenols). HPSEC anal. showed that the major components of this fraction were high-mol. weight substances, which were supposed to be proanthocyanidins, consisting of approx. 22 catechin units in its structure.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:965021 CAPLUS

DOCUMENT NUMBER: 141:384030

TITLE: Material for inhibiting enamel decalcification

INVENTOR(S): Imai, Susumu; Tagashira, Motoyuki;  
Kanda, Tomomasa; Nishizawa, Toshiki; Hanada, Nobuhiro

PATENT ASSIGNEE(S): Asahi Breweries Ltd., Japan

SOURCE: PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004096165	A1	20041111	WO 2004-JP6465	20040430
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2004233706	A1	20041111	AU 2004-233706	20040430
CA 2524087	A1	20041111	CA 2004-2524087	20040430
EP 1621081	A1	20060201	EP 2004-730741	20040430
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK			
CN 1780604	A	20060531	CN 2004-80011641	20040430
KR 810946	B1	20080310	KR 2005-720598	20051028
US 20060216248	A1	20060928	US 2005-554932	20051031
US 20080003186	A1	20080103	US 2007-773240	20070703
PRIORITY APPLN. INFO.:			JP 2003-124725	A 20030430
			WO 2004-JP6465	W 20040430
			US 2005-554932	A3 20051031

AB It is intended to provide an effective cariostatic material which inhibits dental plaque formation as well as onset of dental caries. A material for inhibiting enamel decalcification containing, as the active ingredient, a proanthocyanidin-like polyphenol originating in hop bract or immature apple, which effectively inhibits not only dental plaque formation but also the dental caries process including proliferation of bacteria, formation of acids by the bacteria and enamel decalcification. Also, foods, drinks and oral care goods with the use of the above substance as an enamel decalcification inhibitor are provided. An enamel decalcification inhibitor was prepared from immature apple fruit extract The obtained enamel decalcification inhibitor was combined at 0.005 % with other ingredients to 100 % to give a tooth paste.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS

## RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:758823 CAPLUS  
 DOCUMENT NUMBER: 141:276589  
 TITLE: Method for separating polyphenols  
 INVENTOR(S): Yanagida, Akio; Shibusawa, Yoichi; Kamifuji, Heisaburo; Tagashira, Motoyuki; Kanda, Tomomasa  
 PATENT ASSIGNEE(S): Asahi Breweries, Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004256481	A	20040916	JP 2003-51143	20030227
PRIORITY APPLN. INFO.:			JP 2003-51143	20030227

AB The title method comprises using high-speed counter-current chromatog. (liquid-liquid partition chromatog.) and a two-phase solvent system (consisting of an ether, acetonitrile, or an alc., water or acidic aqueous solution) in which the upper layer (or lower layer) is the stationary phase and the lower layer (or upper layer) is the mobile phase. The title method is used for quality control for food, pharmaceuticals, and cosmetics containing polyphenols.

L10 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:515517 CAPLUS  
 DOCUMENT NUMBER: 141:33848  
 TITLE: Process for producing hop glume polyphenols  
 INVENTOR(S): Tagashira, Motoyuki; Kanda, Tomomasa  
 PATENT ASSIGNEE(S): Asahi Breweries, Ltd., Japan  
 SOURCE: PCT Int. Appl., 16 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004052898	A1	20040624	WO 2003-JP15959	20031212
W: AU, CN, JP, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
AU 2003289063	A1	20040630	AU 2003-289063	20031212
AU 2003289063	B2	20071018		
EP 1577315	A1	20050921	EP 2003-778886	20031212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, LT, LV, FI, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1726221	A	20060125	CN 2003-80105813	20031212
US 20060251760	A1	20061109	US 2005-538790	20050610
PRIORITY APPLN. INFO.:			JP 2002-360424	A 20021212
			WO 2003-JP15959	W 20031212

AB This invention provides a process for efficiently producing highly purified hop glume polyphenols using hop glume as the starting material; food, drinks, cosmetics and drugs containing hop glume polyphenol are disclosed. Namely, a process for producing hop polyphenols comprises

extracting hop glume with an aqueous alc. solution, concentrating the extract to give a residual

alc. concentration of 0.5 to 2% and then centrifuging and/or filtering the concentrate

Formulations containing hop glume polyphenols are given.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL STNGUIDE

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

68.64

169.41

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

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FILE CONTAINS CURRENT INFORMATION.

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(FILE 'HOME' ENTERED AT 15:21:58 ON 30 APR 2009)

FILE 'CAPLUS' ENTERED AT 15:22:17 ON 30 APR 2009

L1 0 S HOPBRACT  
L2 5382 S HOPS  
L3 134 S L2 AND POLYPHENOLS  
L4 50 S L3 AND EXTRACT  
L5 0 S L4 AND PY,=2003  
L6 29 S L4 AND PY<=2003

FILE 'STNGUIDE' ENTERED AT 15:24:27 ON 30 APR 2009

FILE 'CAPLUS' ENTERED AT 15:27:42 ON 30 APR 2009

L7 0 S "HUMULUS LUPULUS L" "HOP BRACT POLYPHENOLS" "HOP BITTER ACIDS  
L8 122 S TAGASHIRA M?/AU  
L9 1828 S KANDA T?/AU  
L10 14 S L8 AND L9

FILE 'STNGUIDE' ENTERED AT 15:30:14 ON 30 APR 2009